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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,833	01/14/2004	Shunpei Yamazaki	0756-7247	2372
31780	7590	11/15/2007		
ERIC ROBINSON PMB 955 21010 SOUTHBANK ST. POTOMAC FALLS, VA 20165			EXAMINER CHIEN, LUCY P	
			ART UNIT 2871	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/756,833	Applicant(s) YAMAZAKI ET AL.	
	Examiner Lucy P. Chien	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2007.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 46-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 46-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 1-4,7,9,11,13,46-59** are rejected under 35 U.S.C. 103(a) as being unpatentable over of Kim et al (US 2002/0085143) and of Okazaki et al (US 5298768) in view of Yamazaki (US 20010040645) in view of Shiraishi (US 20010012089).

#### Regarding Claim 1-4,7,9,11,13,

Kim et al discloses (Fig. 2) the use of a light emitting layer (204) a metal film (203) formed over the concave portion, a insulating film (202) a semiconductor device (208) formed on the insulating film (202) a liquid crystal cell (211) electrically connected to the semiconductor device (208) and a second substrate (201b) wherein the semiconductor device (208) and the liquid crystal cell (211) are formed between the first substrate (207) and the second plastic substrate (201b).

Kim et al does not disclose a first substrate, a light emitting device formed in the concave portion of the first substrate (also formed over the first substrate) a resin covering the light emitting device and Kim et al does not disclose the use of an adhesive. And wherein the first plastic substrate is larger than the second substrate.

Okazaki et al discloses (Fig. 10) a first substrate (16) a light emitting diode (Column 3, lines 17-30) formed in the concave portion (20) of the first substrate (also

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formed over the first substrate) (16) a resin (Column 3, lines 17-30) covering the light emitting device (1) used as back light for liquid crystal displays. Therefore, Okazaki et al's backlight would replace the light emitting layer (204) of Kim et al, so Okazaki et al's backlight would be positioned under the insulating layer (204) of Kim et al. Thus, an insulating film is formed over the resin.

Yamazaki et al discloses the use of an adhesive ([0134]) to attach layers and substrates in order to hold the layers together.

Shiraishi discloses the first substrate (11) is larger than the second substrate (12) to provide extra length portion (3) to have the terminal portion (31).

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Kim et al's display to include Okazaki et al's light emitting device to improve the light emission efficiency and the quality of the product (Column 2, rows 35-40) and to include Yamazaki's adhesive motivated by the desire to provide stable attached layers ([0134]). And to include Shiraishi's larger first substrate motivated by the desire to provide a extra length portion to have a terminal portion. [0009]

Regarding Claim 46,47,

In addition to Kim et al, Okazaki et al, Shiraishi and Yamazaki as disclosed above, Okazaki et al discloses (Fig. 10) the spatula flattens the resin so as to fill the depression with the resin to provide a level surface (Column 6, rows 57-67). It would have been obvious to one of ordinary skilled in the art to modify Kim et al's display to include Okazaki et al's flat surface resin motivated by the desire to provide a level surface.

Regarding Claim 48-51,

In addition to Kim et al, Okazaki et al, Shiraishi and Yamazaki as disclosed above, Okazaki et al discloses (Column 8, rows 30-34) the resin comprises a transparent particle.

Regarding Claim 52-55,

In addition to Kim et al, Okazaki et al, Shiraishi and Yamazaki as disclosed above, Okazaki et al discloses (Column 3, rows 1-10) the light emitting device includes a pair of electrodes. Thus preventing the appearance of the product from deteriorating when the surface mounting of the light emitting element is soldered. (Column 3, rows 32-38). It would have been obvious to one of ordinary skilled in the art to modify Kim et al's display to include Okazaki et al's pair of electrodes motivated by the desire to prevent the appearance of the product from deteriorating when the surface mounting of the light emitting element is soldered (Column 3, rows 32-38).

Regarding Claim 56-59,

Kim et al, Okazaki et al, Shiraishi and Yamazaki discloses everything as disclosed above, Kim et al discloses the substrate has polarization function [0030]. It would have been obvious to one having ordinary skill in the art to have a substrate with polarization functions which would eliminate an extra polarizing layer to simplify the fabricating process.

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**Claim 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 20020085143) and of Okazaki et al (US 5298768) and of Yamazaki (US 20010040645) and of Shiraishi (US 20010012089) in view of Oguchi et al (US 4648691)

Regarding Claim 5,

Kim et al, Okazaki et al, Shiraishi and Yamazaki do not disclose the metal film being sand blasted.

Oguchi et al discloses sand blasting the metal film in order to form a rugged surface suitable to be used in a display to provide a higher degree of whiteness. (Col. 8, rows 21-37)

It would have been obvious to one of ordinary skilled in the art to modify Kim et al, Okazaki et al, Shiraishi I and Yamazaki's display to include Oguchi et al's sand blasting method of the metal film in order to form a rugged surface suitable to be used in a display to provide a higher degree of whiteness. (Col. 8, rows 21-37)

**Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable of Kim et al (US 2002/0085143) and Okazaki et al (US 5298768) and of Yamazaki (US 20010040645) and of Shiraishi (US 20010012089) in view of Yokoyama et al (US 20020041348).

Kim et al, Okazaki et al, Shiraishi and Yamazaki do not disclose the use of a transparent liquid crystal.

Yokoyama et al in the abstract discloses the use of a transparent liquid crystal cell that controls passage of light emitted from the surface (see abstract).

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It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify Kim et al, Okazaki et al, Shiraishi and Yamazaki to include Yokoyama et al's transparent liquid crystal to control passages of the light emitted from the surface of the display (see abstract).

**Claim 8,10,12,14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2002/0085143) and Okazaki et al (US 5298768) and of Yamazaki (US 20010040645) and of Shiraishi (US 20010012089) in view of Weindorf et al (US 20020130985).

Kim et al, Okazaki et al, Shiraishi and Yamazaki do not disclose the use of a flexible printed wiring board.

Weindorf et al discloses (Page 3, [0033]) using a flexible printed wiring board connected to the i-emitting diode that is supplied with current to eliminate the need for daughter boards or other LED's which are more expensive.

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify of Kim et al, Okazaki et al, Shiraishi and Yamazaki to include Weindorf's flexible printed wiring board to eliminate the need for daughter boards or other interconnecting devices or the more expensive side-lighting LEDs also to provide the display with flexibility (Page 3, [0033]).

**Claim 15,17,18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2002/0085143) and Okazaki et al (US 5298768) and of Yamazaki (US



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20010040645) and of Shiraishi (US 20010012089) in view of Chaudhari et al (US 6331381).

Kim et al, Okazaki et al, Shiraishi and Yamazaki do not disclose the liquid crystal displays used in a cellular phone, wrist watch, and personal computer.

Chaudhari et al discloses (Column 1, Row 13-16) the use of LCD's in a cellular phone, wrist watch, and personal computers to provide a displaying image in the products.

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify of Kim et al, Okazaki et al, Shiraishi and Yamazaki include Chaudhari et al's liquid crystal displays in a cellular phone, wrist watch, and personal computers with a display that is light and thin such as an LCD.

**Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2002/0085143) and Okazaki et al (US 5298768) and of Yamazaki (US 20010040645) and of Shiraishi (US 20010012089) in view of Kawagoe et al (US 5781263).

Kim et al, Okazaki et al, Shiraishi and Yamazaki do not disclose the liquid crystal displays used in an electronic book.

Kawagoe et al discloses (Column Row) the use of a LCD in an electronic book.

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify of Kim et al, Okazaki et al, Shiraishi and Yamazaki to include



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Kawagoe et al's liquid crystal displays in an electronic book to provide it with a display that is light and thin such as an LCD.

**Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2002/0085143) and Okazaki et al (US 5298768) and of Yamazaki (US 20010040645) and of Shiraishi (US 20010012089) in view of Washizuka et al (US 4202607).

Kim et al, Okazaki et al, Shiraishi and Yamazaki do not disclose the liquid crystal displays used in a front glass.

Washizuka et al discloses (Abstract) the use of an LCD in a front glass such as a mirror or window.

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify of Kim et al, Okazaki et al, Shiraishi and Yamazaki to include Washizuka et al's liquid crystal displays in a front glass to provide the front glass with a display that is light and thin such as an LCD.

**Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2002/0085143) and Okazaki et al (US 5298768) and of Yamazaki (US 20010040645) and of Shiraishi (US 20010012089) in view of Boutaleb et al (US 4536014).

Kim et al, Okazaki et al, Shiraishi and Yamazaki do not disclose the liquid crystal displays used in an electronic card.

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Boutaleb et al discloses (Column 4, Row 13-24) the use of a LCD in a credit card.

It would have been obvious to one of ordinary skill in the art, at the time of the invention to modify of Kim et al, Okazaki et al, Shiraishi and Yamazaki to include Boutaleb et al's liquid crystal displays in an electronic card to provide the electronic card with a display that is light and thin such as an LCD.

### ***Response to Arguments***

Applicant's arguments filed 7/31/2007 have been fully considered but they are not persuasive.

Applicant's arguments that "...how or why the resin of Okazaki and the adhesive of Yamazaki '645 would have been incorporated into the device shown in Figure 2 of Kim without destroying the functionality and intended purpose of Kim or that the functionality of Okazaki and Yamazaki '645 are more desirable than the intended purpose of Kim." Examiner used Okazaki et al to disclose a LED with a resin formed above it in the concave substrate to show another example of a well known backlight positioned under the liquid crystal. It would be obvious to use this specific backlight in any liquid crystal display. It is known in the art to use adhesives to attach layers together. Thus, Examiner used Yamazaki '645 to show what an adhesive is used for. It would be obvious to use Yamazaki's adhesive to attach the backlight to the display.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy P. Chien whose telephone number is 571-272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lucy P Chien  
Examiner  
Art Unit 2871

  
ANDREW CONNER  
PATENT EXAMINER